

Question bank (SCIENCE) Class 10 (2017-18)

1. Complete and balance the reaction: $\text{Fe}_2\text{O}_3 + \text{Al}$
2. Balance the chemical equations: $\text{Pb}(\text{NO}_3)_2(\text{s}) \xrightarrow{\text{Heat}} \text{PbO}(\text{s}) + \text{NO}_2(\text{g}) + \text{O}_2(\text{g})$
3. Identify the type of reaction in the following example:
 $\text{Na}_2\text{SO}_4(\text{aq}) + \text{BaCl}_2(\text{aq}) \rightarrow \text{BaSO}_4(\text{s}) + 2\text{NaCl}(\text{aq})$
4. Write fully balanced chemical equation and state the physical condition and physical state of the reactants in the following reaction.
Aluminium metal dissolves in aqueous copper sulphate solution with the formation of aluminium sulphate and copper.
5. (i) Account for the following.
 - (a) White silver chloride turn grey in sunlight.
 - (b) Brown coloured copper powder on heating in air turns into black coloured substance.(ii) What do you mean by:
 - (a) Displacement reaction
 - (b) Reduction reaction
 - (c) Combination reaction? Write balanced chemical equation.
6. (a) What happens chemically when quick lime is added to water?
 - (a) Balance the following chemical equation
 $\text{MnO}_2 + \text{HCl} \rightarrow \text{MnCl}_2 + \text{Cl}_2 + \text{H}_2\text{O}$
 - (b) What is decomposition reaction? Explain it with suitable example.
7. When the powder of a common metal is heated in an open china dish, its colour turns black. However, when hydrogen is passed over the hot black substance so formed, it regains its original colour. Based on the above information answer the following question:
 - (i) What type of chemical reaction takes place in each of the two given steps?
 - (ii) Name the metal initially taken in the powder form. Write balanced chemical equations for both reactions.
8. "Barium chloride reacts with aluminium sulphate to give aluminium chloride and a precipitate of barium sulphate"
 - (i) Translate the above statement into a chemical equation.
 - (ii) State two types in which this reaction can be classified.
9. "A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed".
 - (i) Translate the above statement into a chemical equation.
 - (ii) State two types in which this reaction can be classified.
10. Write the chemical name and formula of common salt. State how sodium hydroxide is prepared using this salt.
11. support your answer.
12. Write balanced equations for the reaction of:
 - (i) Iron with steam
 - (ii) Calcium with water.

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13. What would you observe when zinc is added to a solution of iron (II) sulphate? Name the type of reaction and write the chemical equation.
14. A metal A, which is used in thermite process, when heated with oxygen gives an oxide B, which is amphoteric in nature. Identify A and B. Write down the reactions of oxide B with HCl and NaOH.
15. Crystals of a substance changed their colour on heating in a closed vessel but regained it after sometime, when they were allowed to cool down.
 - (a) Name one such substance.
 - (b) Explain the phenomenon involved.
16. Write observation with reaction for the following:
Granulated zinc reacts with dil. Sulphuric acid.
17. Give an example each for thermal decomposition and photochemical decomposition reactions. Write relevant balanced chemical equations also.
18. What is an oxidation reaction? Give an example of oxidation reaction. Is oxidation an exothermic or an endothermic reaction?
19. (i) What is observed when a solution of potassium iodide is added to a solution of lead nitrate taken in a test tube?
 - (ii) What type of reaction is this?
 - (iii) Write a balanced chemical equation to represent the above reaction.
20. What is a redox reaction? When a magnesium ribbon burns in air with a dazzling flame and forms a white ash, is magnesium oxidized or reduced? Why?

21. List two main advantages of vegetative propagation. Describe the events which occur in the human stomach when food reaches it.
22. What is meaning of term double circulation? Explain .
23. What are phytohormones? Mention any two functions regulated by phytohormones in the plants.
- 24 Draw a labeled diagram of human female reproductive system. Describe how fertilization occurs in human beings

- 25 Write the names and chemical formula of the products formed by the action of chlorine on slaked lime.
- 26 Write the name and chemical formula of the main product formed by heating baking soda.
- 27 A compound which is prepared from gypsum has the property of hardening when mixed with proper quantity of water. Identify the compound and write its chemical formula and equation of the R_a.
- 28 What happens when water is added to quick lime?
- 29 Which bases are called alkalises? Give an example of an alkali.
- 30 What would be the color of litmus in a solution of sodium carbonate?
- 31 Names the gas usually liberated when a dilute acid reacts with a metal. What happens when a burning candle is brought near this gas?

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- 32 How does the pH of the solution change when a solution of a base is diluted?
- 33 Dry ammonia gas has no action on litmus paper, but a solution of ammonia in water turns red litmus paper blue. Why is it so?
- 34 What is the colour of $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ crystals? How does this colour change upon heating? Give balanced chemical equation for the changes.
- 35 Classify the following salts into acidic, basic and neutral. Potassium sulphate, ammonium chloride, sodium carbonate, sodium chloride, sodium carbonate, sodium chloride.
- 36 For making cake, baking powder is taken. If at home your mother uses baking soda instead of baking powder in cake.
- (a) How will it affect the taste of the cake and why?
- (b) How can baking soda be converted into baking powder?
- 37 In one of the industrial processes used for manufacture of sodium hydroxide, a gas X is formed as by product. The gas X reacts with dry slaked lime to give a compound Y which is used as a bleaching agent in chemical industry. Identify X and Y.
- 38 What is amphoteric oxides? Give two examples of amphoteric oxide with balanced chemical equation.
- 39 Name two salts that are used in black and white photography. Give reactions when they are exposed to light.
- 40 A knife, which is used to cut a fruit, was immediately dipped into water containing drops of blue litmus solution. If the colour of the solution is changed to red what inference can be drawn about the nature of the fruit and why?
- 41 A white powder A is a mild non corrosive base and is used in the preparation of cakes. When the powder is heated it gives another powder B. The powder B is recrystallised to get a substance C which has detergent properties. Identify A,B and C and also write balanced chemical equations for the conversions of A to B.
- 42 What are the three products of 'Chlor-alkali process'? Write one commercially or industrially important material each that can be prepared from each of these products?
- 43 Write the chemical formula for bleaching powder. How is bleaching powder prepared? For what purpose is it used in paper factories?
- 44 Write the name and chemical formula of the calcium compound used for disinfecting drinking water. How is this compound manufactured?
- 45 A compound which is prepared from gypsum has the property of hardening when mixed with a proper quantity of water. Identify the compound. Write the chemical equation for its preparation. For what purpose is it used in hospitals?
- 46 What is 'Baking Powder'? How does it make cakes soft and spongy?
- 47 A calcium compound which is a yellowish white powder is used as a disinfectant and also in the textile industry. Name the compound. Which gas is released when this compound is left exposed to air?
- 48 State the chemical property in each case on which the following uses of baking soda are based:
(i) as an antacid. (ii) as a constituent of baking powder.
- 49 How is chloride of lime chemically different from calcium chloride? Why does the chloride of lime gradually lose its chlorine when kept exposed to air?

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- 50 What happens when chlorine is passed over dry slaked lime? Write chemical equation of the reaction involved. Mention three properties of the product.
- 51 (a) An element 'X' on reacting with oxygen forms an oxide X_2O . The oxide dissolves in water and turns blue litmus red. Predict the nature of the element whether metal or nonmetal?
(b) A solution of copper sulphate was kept in an iron pot. After few days, the pot developed some holes in it. How will you account for this.
- 52 Tooth enamel is one of the hardest substance in our body. How does it undergo damage due to the eating of chocolates and sweets? What should we do to prevent it?
- 53 (a) Why does an aqueous solution of an acid conduct electricity?
(b) How does the concentration of hydronium ions (H_3O^+) change when a solution of an acid is diluted?
(c) Which has a higher pH value, a concentrated or dilute solution of hydrochloric acid?
- 54 Name the energy obtained from sea or ocean water due to the difference in temperature at the surface and in deeper sections of these water bodies.
- 55 (i) List three factors on which the resistance of a conductor depends.
(ii) Write the SI unit of resistivity.
- 56 Draw magnetic field lines around a bar magnet. Name the device which is used to draw magnetic field lines.
- 57 A copper wire has diameter 0.5 mm and resistivity $1.6 \times 10^{-8} \text{ohm.m}$. Calculate the length of this wire to make its resistance 10ohm. How much does the resistance change if the diameter is doubled without changing its length.
- 58 (a) Why is tungsten used for making bulb filaments of incandescent lamps.
(b) Name any two electric devices based on heating effect of electric current.
(c) An electric bulb is connected to a 220V generator. The current is 2.5 A. calculate the power of the bulb.
- 59 (a) State Right Hand Thumb rule to find the direction of the magnetic field around a current carrying straight conductor.
(b) How will the magnetic field be affected on:
(i) Increasing the current through the conductor
(ii) Reversing the direction of flow of current in the conductor.
- 60 Nuclear power is an excellent non- conventional source of energy. Still it is not used commonly for power generation. Why? State three reasons.
- 61 State the main difference between thermal power and hydro power plants based on electricity generation. Name two dams/projects which were opposed due to the problems of rehabilitation of displaced people, damage to the ecosystem etc.

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62 (a) What is a solenoid? Draw a diagram to show field lines of the magnetic field through and around a current carrying solenoid. State the use of magnetic field produced inside a solenoid.

(b) List two properties of magnetic lines of force.

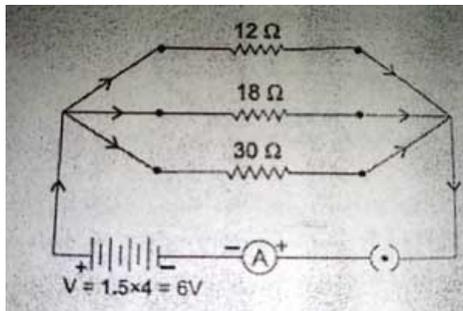
OR

(a) Draw a schematic diagram of a common domestic circuit showing provision of

(i) Earth wire, (ii) Main fuse (iii) Electricity meter and (iv) distribution box

(b) distinguish between Short Circuiting and Overloading.

63 For the circuit shown in the diagram given:



Calculate:

(i) the total effective resistance of the circuit.

(ii) the total current drawn from the battery and

(iii) the value of current through each resistor.

64 The rating of an electric heater is 1100 W; 220 V. Calculate its resistance when it operates at 220 V. Also calculate the energy consumed in kWh in the month of November if the heater is used daily for four hours at the rated voltage.

65 Explain reason for the following:

(i) Tungsten is used almost exclusively for filament of electric lamps.

(ii) The series arrangement is not used for domestic circuits.

(iii) Copper and aluminium wires are usually employed for electricity transmission.

66 The rating of an electric oven is 4400 W; 220 V. Calculate its resistance when it operates at 220 V. Also calculate the energy consumed in kWh in the month of September if the Oven is used daily for 5 hours at the rated voltage.

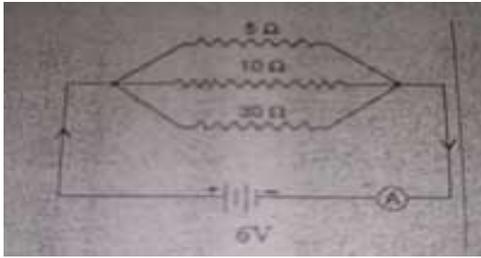
67 A piece of wire of resistance 20 Ω is drawn out so that its length is increased to twice its original length. Calculate the resistance of the wire in the new situation.

68 (a) For the circuit shown below in the diagram, calculate:

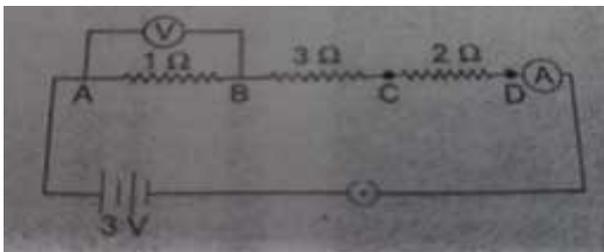
(i) Value of current through the 30Ω resistor.

(ii) Total resistance of the circuit 6V

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- (b) Give two advantages of connecting electrical devices in parallel with battery.
- 69 (a) Explain the function of electric fuse.
 (b) An electric blub is marked 60 W. what does this mean? How much energy does it consume if used for 1 hour?
- 70 What would be the reading of ammeter and voltmeter in the given circuit?



- 71 Two conducting wires of same material, equal length and equal diameter are first connected in series. How does the heat produced by the combination of resistance change?
- 72 Table gives the resistivity of three samples

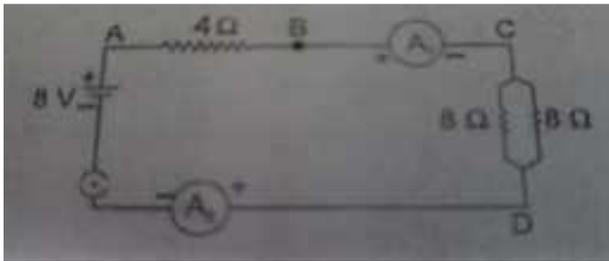
(a) Samples	A	B	C
Resistivity (in Ω m)	1.6×10^{-8}	7.5×10^{17}	44×10^{-6}

Which of them is a good conductor and which is an insulator? Why?

(b) A resistance wire (40 resistance) is doubled on it, calculate the new resistance of the wire.

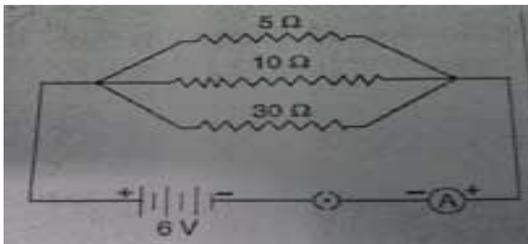
- 73 State Ohm's law. How can it be verified experimentally? Does it hold good under all conditions? Comment.
- 74 What is electrical resistivity? In a series electrical circuit comprising a resistor made up a metallic wire, the ammeter reads 5 A. The reading of the ammeter creases to half when the length of the wire is doubled. Why?
- 75 Find out the following in the electric circuit given in figure.

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- (a) Potential difference across 4Ω resistance
- (b) Power dissipated in 4Ω resistor
- (c) Difference in ammeter readings, if any

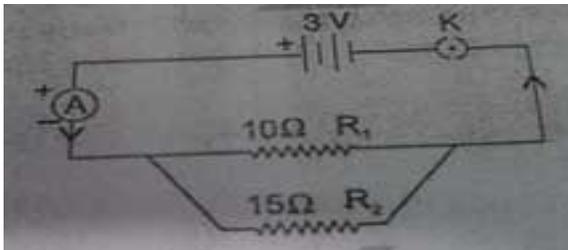
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In the above circuit diagram calculate:

- (a) the value of current through each resistor,
- (b) the total current in the circuit and
- (c) the total effective resistance of the circuit.

77 Study the following circuit and answer the questions:



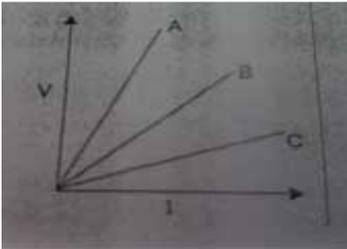
- (i) State the type of combination of the two resistors in the circuit.
- (ii) How much current is following through
 - (a) 10 Ω and
 - (b) 15 Ω resistors?
- (iii) What is the ammeter reading?

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- (a) What is meant by electric resistance of conductor?
- (b) A wire of length L and resistance R is stretched so that the length is doubled and area of cross section is halved. How will (i) resistance change and (ii) resistivity change?

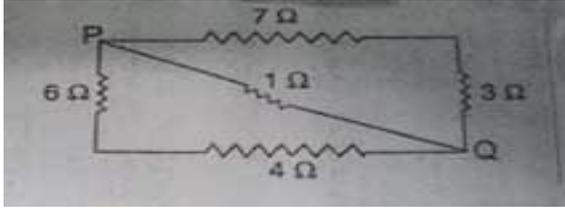
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- 79 Express joule's Law of heating mathematically. What is the resistance of 12 m wire having radius 2×10^{-4} m, specific resistivity is 3.14×10^{-8} Ohm.
- 80 (a) Why are electric toaster and electric iron made of an alloy rather than pure metal?
(b) An electric iron of resistance 20 Ω takes a current of 5 A, calculate the heat developed in 30 second.
- 81 (a) Why is an ammeter likely to burn out if you connect it in parallel?
(b) Why is series arrangement not found satisfactory for domestic lights?
- 82 A copper wire of length 3m and the area of cross section 1.7×10^{-6} m² has a resistance of 3×10^{-2} ohm. Calculate the resistivity of copper.
- 83 A student performs an experiment with 4 cells and a resistance wire and an ammeter in series and observes that when the number of cells in the circuit is decreased, the value of current through the wire also decreased. Name the law that is involved in the experiment and write its mathematical form.
V-I graph for two resistors R₁, R₂ and their series combination is as below. Which graph represents the series combination of the other two? Give reason.

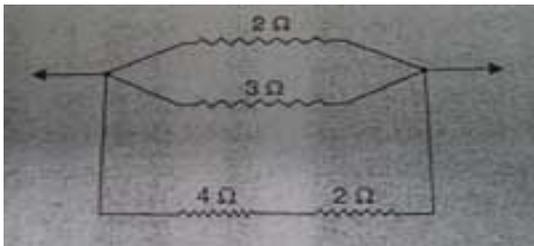


- 84 Two resistors of resistances 30 Ω and 60 Ω respectively are connected to a battery of 6V so as to have.
(a) Maximum resistance (b) Maximum current
(i) How will you connect the resistances in each case?
(ii) Calculate the strength of the current in the circuit in both cases.
- 85 calculate the effective resistance between P and Q

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86 Calculate the Equivalent resistance from the following combination of resistors.



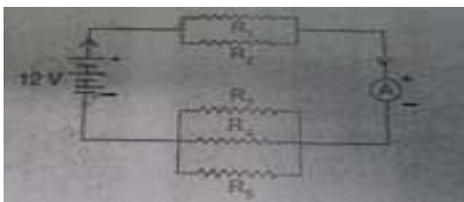
87 Explain the following:

- Why is tungsten used for the filament in electric bulbs?
- Why are the conductors of electric heating devices, made of an alloy?
- How does the resistance of a wire vary with its cross sectional area?

88 How many resistors of 88Ω are connected in parallel to carry 10 A current on 220 V line?

89 An electric iron consumes energy at a rate of 840 W when heating is at the maximum rate and 360 W when the heating is at the minimum. the voltage is 220 V. What are the current and the resistance in each case?

90 In figure 'A' $R_1 = 10\Omega$, $R_2 = 40\Omega$, $R_3 = 30\Omega$, $R_4 = 20\Omega$, $R_5 = 60\Omega$ and a 12 V battery are connected to the arrangement. Calculate:



- total resistance in the circuit and
- total current flowing in the circuit.

91 Explain two ways to induce current in a coil. When is the induced current produced highest? State the rule used to find direction of induced current.

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- 92 (a) What are the factors on which the magnetic field produced by the current carrying circular coil depends?
(b) What happens if the current through the coil is reversed?
- 93 Describe an activity to draw the magnetic field line around a coil of wire.
- 94 Why does a current carrying conductor kept in a magnetic field experience force? On what factors does the direction of this force depend? Name and state the rule used for determination of direction of this force.
- 95 What is a solenoid? Draw a diagram to show the magnetic field lines around a solenoid. What is its main use?
- 96 Explain the magnetic effects of current for Oersted's experiment with the help of labeled diagram.
- 97 State the rule to determine the direction of force experienced by a current carrying conductor in a magnetic field. How will this force get affected on:
(i) Doubling the magnitude of current?
(ii) Reversing the direction of current flow?
- 98 Under what condition does a current carrying conductor kept in a magnetic field experience maximum force? On what other factors does the magnitude of this determination of direction of this force.
- 99 A coil made of insulated copper wire is connected to a galvanometer. What will happen to the deflection of the galvanometer if a bar magnet is pushed into the coil and then pulled out of it? Give reason for your answer and name the phenomenon involved.
- 100 How will the magnetic field produced in a current carrying a circular coil change if we
(i) Increase the value of current,
(ii) Increase the distance from the coil,
(iii) Increase the number of turns of the coil?
- 101 State Fleming's right hand rule. Give one application of this rule. What is SI unit of induced current?
- 102 When is an electric circuit said to be over loaded? State two measures to avoid it. What name is given to a situation in which the live and the neutral wires accidentally come in contact? State the role of a safety device in this situation.
- 103 Draw a diagram to show how a magnetic needle deflects when it is placed above or below a straight conductor carrying current depending on the direction of the current in the conductor.
- 104 Explain with the help of a labeled diagram the distribution of magnetic field due to a current through a circular loop. Why is it that if a current carrying coil has turns, the field produced at any point is n times as large as that produced by a single turn?
- 105 (a) A positively charged particle projected towards west is deflected towards north by a magnetic field. What is the direction of the magnetic field?
(b) Draw the magnetic field lines of the field produced due to a current carrying circular loop.
(c) State the law used to find the direction of magnetic field around a straight current carrying conductor.
(b) State the rule to determine the direction of a:
(i) magnetic field produced around a straight conductor- carrying current.

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- (ii) force experienced by a current carrying straight conductor placed in a magnetic field, which is perpendicular to it.
- (iii) Current induced in coil due to its rotation in a magnetic field.

(b) What is the function of an earth wire? Why is it necessary to earth metallic appliances?

106 Answer the following questions:

- (i) What is the direction of magnetic field lines outside a bar magnet?
- (ii) What is the SI unit of magnetic field?
- (iii) What does crowding of magnetic field lines indicate?
- (iv) What is the frequency of A.C. in India?
- (v) Name two organs in the human body where magnetic field is quite significant.

107 A small quantity of silver chloride is kept in the sunlight in a china dish for about half an hour

- (i) State the change you would observe in the colour of silver chloride. Suggest a reason for this change.
- (ii) Write a balanced chemical equation for the reaction taking place in this case.

108 Solutions of barium chloride and sodium sulphate in water react to give insoluble barium sulphate and solution of sodium chloride.

- (i) Write a balanced chemical equation for the above mentioned reaction.
- (ii) Identify and define the type of reaction.
- (iii) State the colour of barium sulphate formed.

109 A few crystals of copper sulphate are heated in a dry boiling tube.

- (a) State their colour before and after heating.
- (b) Give the reason for this colour change.
- (c) How can the original colour of crystals be restored? Write the chemical formula of the copper sulphate so obtained.

110 Complete and balance the following reaction equations.

- (a) $\text{Al} + \text{H}_2\text{O} \xrightarrow{\text{steam}}$
- (b) $\text{Al} + \text{O}_2 \longrightarrow$
- (c) $\text{Al} + \text{HCl}$

111 (a) Write the chemical name and formula of each of the following:

- (i) Baking soda
- (ii) Washing soda
- (b) How does heating of baking soda help in making a cake soft and spongy?
- (c) List two uses of washing soda.

112 (a) Write the chemical formula of each of the following:

- (i) Plaster of Paris
- (ii) Gypsum
- (b) How can plaster of Paris be converted into gypsum?
- (c) List two uses of plaster of Paris stating the property of this compound responsible for these uses.

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113 (a) Name the main ore of mercury. How is mercury obtained from its ore? Give balanced chemical equations.

(b) What is thermit reaction? How is it used to join the railway tracks or cracked machine parts?

(c) Name the method used to extract metals of high reactivity.

(d)

Write name of the compound :

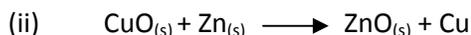
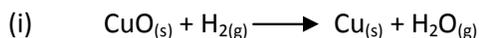
(i) Used for softening hard water

(ii) Which is a component of washing soda

(iii) Which is used as an oxidizing agent in many chemical industries

114 How is food trans-located from leaves to the other parts of the plant?

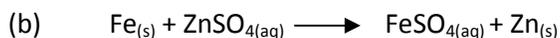
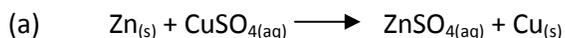
(a) In the following reactions name the reactants which undergo oxidation and which undergo reduction:



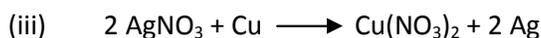
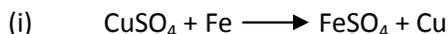
(b) State one industrial application of reduction.

115 Study the reaction given below.

State which of the following chemical reactions will take place or not, given suitable reason for each:



116 Study the following reaction and explain the reactivity. Arrange Cu, Fe, Zn and Ag in increasing order of their reactivity.



117 Draw a neat diagram of excretory system of human beings and label on it:

(i) Left kidney

(ii) Urinary bladder

118 Explain two different ways by which living organisms get their food.

119 Find the minimum rating of fuse that can be safely used on a line on which two 1.1 kW, electric geysers are to run simultaneously. The supply voltage is 220V.

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120 List three events that occur during the process of photosynthesis. State in brief the role of stomata in this process. Describe an experiment to show that sunlight is essential for photosynthesis.

- 121 (a) why is nutrition a necessity for an organism? State three reasons.
(b) What is likely to happen if green plants disappear from earth?
(c) "All plants give out oxygen during day and carbon dioxide during night." Justify this statement.

- 122 (a) Draw a neat diagram of alimentary canal and label the following parts.
(i) the largest gland.
(ii) the gland that secretes digestive enzymes as well as hormones.
(iii) the part where digested food is absorbed.
(b) what are Villi? Mention their functions.

123 (a) draw the cross section of the leaf and label the following parts.

- (i) Upper epidermis
(ii) Chloroplast
(b) Define photosynthesis
(c) List three events which occur during this process.
(d) Write down the chemical equation involved in photosynthesis.
(e) How is unused energy stored in plants?

124 (a) Draw a sectional view of the human heart and label:

- (i) Pulmonary artery
(ii) Aorta
(iii) Septum
(iv) Ventricles
(b) Arteries have thick elastic walls while veins have valves, explain.

125 (a) Draw the human excretory system and label:

- (i) Left kidney (ii) urethra
1. Urinary bladder (iv) vena cava
(b) What is the main toxic waste that a kidney filters from the blood?
(c) name any two substance which are selectively reabsorbed from the tubules of a nephron.

126 (a) Draw a neat labeled diagram of human respiratory system and label the following parts.

- (i) Bronchiolus (ii) Ring of cartilage
(III) Pharynx (IV) Trachea
(v) Larynx (vI) Diaphragm
(b) what are the factors needed for maintaining the direction of diffusion in plants?

156 (a) Draw the sectional view of the human heart and label the following parts:

- (i) Left atrium
(ii) Pulmonary arteries
(iii) Right ventricle
(iv) Aorta

(b) Why are the valves needed in the heart?

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(c) Leakage of blood from vessels reduces the efficiency of pumping system. How is the leakage prevented?

126 What is the advantage of having four chambered heart? Support your answer with a diagram of the section of a human heart.

127 How do the guard cells regulate opening and closing of stomatal pores? Explain with the help of diagram. Also, indicate what happens to the rate of photosynthesis if stomata get blocked due to dust.

128 Describe an experiment to prove that CO₂ is necessary for photosynthesis.

129 (a) Explain the process of nutrition in Amoeba with suitable diagram.

(b) During one cycle how many times blood goes to heart of fish and why?

130 (a) What is meant by breathing? What happens to the rate of breathing during vigorous exercise and why?

(b) Define translocation with respect to transport in plant. Why is it essential for plants? (a) Draw the structure of a nephron and label the following on it. Glomerulus, Bowman's capsule, Renal artery, Collecting duct.

(b) What happens to glucose that enters the nephron along with filtrate?

131 How is 'respiration' different from 'breathing'? explain the process of 'aerobic' respiration and 'anaerobic' respiration.

132 Define the terms 'nutrition' and 'nutrients'. List two difference between 'Holozoic nutrition' and 'Saprophytic nutrition'. Give two examples of each of these two types of nutrition.

133 (i) Name the blood vessel that brings deoxygenated blood to the human heart.

134 Which chamber of human heart receives deoxygenated blood?

135 Describe how deoxygenated blood from this chamber is sent to lungs for oxygenation.

136 (i) State two structural differences between an artery and a vein.

(ii) Name a non-nucleated cell present in human blood and state one function of this cell.

137 (i) Why is circulation of blood in man known as double circulation?

(ii) Which blood cell in human blood carries hemoglobin? What is its average life span?

(iii) Draw the diagram of human heart.

138 Mendel cross pea plant producing round seed and short pea plant producing wrinkled seed. Write the plant type of F₁ and F₂ progenies he got and the conclusion he had drawn such a cross

139 Why acquired characters are not inherited

140 Differentiate between homologous and analogous organs

141 What are the causes of pollution of river Ganga.

142 What are the advantages of water stored in ground.

143 What is meant by sustainable development? What is its advantage out of the two reuse and recycle which is better and why?

144 Increase in demand of fossil fuel has caused harm to environment. list its 3 ill effects

145 Give reason to justify

Question bank (SCIENCE) Class 10 (2017-18)

- a) The existence of decomposers is essential in a biosphere
- b) Flow of energy in a food chain is unidirectional
- c) Green plants are called producers

146 State 10% law . explain with an example how energy flows through different trophic levels

147 What is biodiversity . what will happen if the biodiversity of an area is not preserved. mention 3 effects of it.

148 What does water shed management mean and aim at? What are the advantages of water shed management.

149 What was chipko andolan ? what is its significance

150 A) Why is tidal energy not likely to be potential source of energy

B) explain how the energy of flowing water is related to solar energy

c) why CNG is considered as environmental friendly fuel .

d) for producing electricity the energy from flowing water is preferred to obtain energy by burning coke . state two reasons for it

151 what is bio gas? describe the working of bio gas with help of diagram?

152 why the depletion of ozone is cause of concern?

153 what type of mirror is used in solar furnace ?

154 at what distance from a concave mirror of focal length 10cm should an object be placed so that its real image is formed 20cm from the mirror?

155 calculate the focal length of a convex lens which produces a virtual image at a distance of 50cm of an object placed at 20cm in front of it?

156 define refractive index of a transparent medium. What is its unit? Which has a higher refractive index glass or water?

157 state the law of refraction of light that defines the refractive index of a medium with respect to the other ? express it mathematically. How is refractive index any medium A with respect to medium B related to the speed of propagation of light in two medium A and B. State the name of this constant when one medium is vacuum or air

158 The refractive indices of glass and water with respect to vacuum are $\frac{3}{2}$ and $\frac{4}{3}$ respectively. If the speed of light in glass is 2×10^8 ms⁻¹ find the speed of light in vacuum and water

159 With the help of a labelled diagram explain briefly the refraction of light through a glass prism. On this diagram, mark (i) incident ray (ii) emergent ray and (iii) angle of deviation

160 A student wants to protect the image of a candle flame on the walls of school laboratory by using a lens:

(a) What type of lens should be used and why?

(b) At what distance in terms of focal length 'f' of the lens should he place the candle flame so as to get (i) a magnified and (ii) a diminished image respectively on the wall? Draw ray diagram to show the formation of the image in each case .

161 State the function of each of the following parts of the human eye :

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- (a) Cornea
- (b) Pupil
- (c) Iris
- (d) Retina

In case of any doubt, consult the concerned subject teachers:

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